

## Special Communication

## A Guide to Reading Health Care News Stories

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From April 16, 2006, through May 30, 2013, a team of reviewers from HealthNewsReview.org, many of whom were physicians, evaluated the reporting by US news organizations on new medical treatments, tests, products, and procedures. After reviewing 1889 stories (approximately 43% newspaper articles, 30% wire or news services stories, 15% online pieces [including those by broadcast and magazine companies], and 12% network television stories), the reviewers graded most stories unsatisfactory on 5 of 10 review criteria: costs, benefits, harms, quality of the evidence, and comparison of the new approach with alternatives. Drugs, medical devices, and other interventions were usually portrayed positively; potential harms were minimized, and costs were ignored. Our findings can help journalists improve their news stories and help physicians and the public better understand the strengths and weaknesses of news media coverage of medical and health topics.

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*Vested interests, marketing, politics and media hype often have more influence on how new medical advances get used than the best scientific evidence.*

Richard A. Deyo and Donald L. Patrick<sup>1(p5)</sup>

**The scholarly literature** on the problems with medical journalism is extensive, going back several decades.<sup>2-4</sup> Since 2004, researchers in Australia, Canada, Germany, the United States, and elsewhere have launched public website projects that grade news stories about medicine and health care.<sup>5-7</sup>

## Summary of Methods Used to Assess News Stories

From April 16, 2006, through May 30, 2013, reviewers from HealthNewsReview.org evaluated an estimated 25% of eligible news stories from major US news media organizations daily (eAppendix in the Supplement). To be eligible for review, stories must have included efficacy or safety claims about health care interventions. Each story was assessed by 2 or 3 reviewers.<sup>8</sup> Journalists were notified when reviews of their stories were published on the website.

During the 7-year period, there were 38 different reviewers: 17 physicians; 5 people with doctor of philosophy degrees, including 1 woman with breast cancer; 5 people with master's degrees, including 1 journalist; 9 other journalists; and 2 other women with breast cancer. All were paid, except the 3 patient representatives who declined payment. Not all reviewers reviewed stories in each year.

Ten review criteria were used to assess each news story reviewed. The review criteria addressed whether the story (1) adequately discussed the costs of the intervention; (2) adequately quantified the benefits of the intervention; (3) adequately quantified the harms of the intervention; (4) evaluated the quality of the evidence; (5) widened the diagnostic boundaries of illness and promoted public awareness of these widened boundaries, which may

expand the market for treatments, a practice that has been termed *disease mongering*; (6) quoted independent sources and identified the conflicts of interest of sources; (7) compared the new approach with existing alternatives; (8) established the availability of the intervention; (9) established whether the approach was truly novel; and (10) appeared to rely solely or largely on a news release as the source of information.

After 7 years and 1889 stories reviewed (approximately 43% newspaper articles, 30% wire or news services stories, 15% online pieces [including those by broadcast and magazine companies], and 12% network television stories), the reviewers graded most stories unsatisfactory on 5 of the 10 review criteria: costs, benefits, harms, quality of the evidence, and comparison of the new approach with alternatives. Drugs, medical devices, and other interventions were usually portrayed positively; potential harms were minimized, and costs were ignored. The reviewers identified common themes in reporting of medical news stories.

## Results

### Risk Reduction Stated in Relative, Not Absolute, Terms

Stories often framed benefits in the most positive light by including statistics on the relative reduction in risk but not the absolute reduction in risk. Consequently, the potential benefits of interventions were exaggerated.

NBC News reported, "In women, aspirin reduces the rate of stroke blood clots in the brain, the most common type, by 24% but had little effect on heart attack risk. In men, daily aspirin cuts heart attack risk by 32% but had little effect on stroke risk."<sup>9</sup> The absolute values for risk reduction were in the journal article on which the story was based.<sup>10</sup> Aspirin users had 2 fewer strokes and 2½ more major bleeding events per 1000 women and 8 fewer myocardial infarctions ("heart attacks") and 3 more major bleeding events per 1000 men.

HealthDay news service reported, "Apixaban showed a 21% relative reduction in the incidence of strokes or systemic embolisms (clots) when compared to warfarin, a 31% relative reduction in major bleeding and an 11% relative reduction in overall mortality."<sup>11</sup> The absolute differences were not provided. Both the 21% and 31% relative risk reductions equate to less than 1 in 100 in absolute risk reduction.

An example of excellence is an article in *The Globe and Mail* of Toronto, Ontario, Canada, which warned, "Be Skeptical About the Herceptin Hype." The article stated, "Herceptin, according to the studies, cut the death rate by one-third. That sounds impressive, but relative risk reductions always do. In reality, the difference in the death rate between the Herceptin and non-Herceptin groups was 2% after three years, and 4% after four years."<sup>12</sup>

### Failure to Explain the Limits of Observational Studies

Rarely do news stories about observational studies explain their limitations. Often, the stories fail to differentiate association from causation. From May 6, 2010, through August 20, 2013, more than a dozen flawed stories about observational studies involving coffee appeared (by ABC, CBS, CNN, Fox, MSNBC, NBC, *The New York Times*, *USA Today*, *The Wall Street Journal*, *The Washington Post*, and WebMD).<sup>13</sup> Each story used language suggesting cause and effect had been established, although it had not. Examples of such language are as follows: "coffee can kill you," "2 cups of coffee lowers uterine cancer risk," "one or more cups a day reduces stroke risk," coffee "radically reduces the risk of colon and rectal cancer," and "coffee fights skin cancer."

An example of excellence is a National Public Radio story that reported, "This study merely observed whether women chose to take aspirin or not, and then correlated that with whether they got melanoma. This kind of 'observational' study doesn't prove anything. 'We would have to do a large clinical trial, randomizing women to receive aspirin vs placebo, following them for 10-plus years,' [the researcher] says."<sup>14</sup>

### The Tyranny of the Anecdote

Stories may include positive patient anecdotes but omit trial dropouts, adherence problems, patient dissatisfaction, or treatment alternatives. In one example, 4 major US news sources used the same "breakthrough" patient anecdote of one man's reported improvement from a heart failure stem cell experiment.<sup>15</sup> This example illustrates another common problem: patient anecdotes provided by public relations representatives for medical centers or industry that put an overly positive spin on an intervention.

An example of how anecdotes can be used appropriately is *The New York Times* story with the headline, "Prone to Error: Earliest Steps to Find Cancer." This story reported the troubling experiences of several women with diagnoses of ductal carcinoma in situ. The article provided depth and a variety of perspectives not often seen in stories about mammography.<sup>16</sup>

### Single-Source Stories and Journalism Through News Releases

Half of all stories reviewed relied on a single source or failed to disclose the conflicts of interest of sources. For certain information, reliance on a news release is appropriate. However, journalists are expected to independently vet claims.

ABC's *Good Morning America* asked, "Could a cure for obesity be just a pill away?" The reporter asserted that because the physician he was interviewing was a consultant to the pill manufacturer he was "the right man to talk to."<sup>17</sup>

Our project identified 121 stories (8% of all applicable stories) that apparently relied solely or largely on news releases as the source of information. In an example of the kind of journalism that would help educate readers about the dangers of overreliance on information from a news release, *The Washington Post* reported, "The press-release conviction of a biotech CEO and its impact on scientific research."<sup>18</sup> The story explained that the biotech company executive was convicted for "willfully overstating in a press release the evidence for benefit of a drug his company made."

### Surrogate Markers May Not Tell the Whole Story

Journalists should distinguish changes in surrogate markers of disease from clinical end points, including serious disease or death. Many news stories, however, focus only on surrogate markers, as do many articles in medical journals.

WebMD reported, "Beet juice may fight dementia."<sup>19</sup> Not only did this study point to a surrogate end point, it was conducted on a sample of only 14 people in just 4 days.<sup>20</sup>

*USA Today* reported, "New drug 'may turn back the clock on heart disease.'" However, the story focused on changes in cholesterol values that may not lead to any true benefit to patients.<sup>21</sup>

Examples of excellence on a similar topic are both Bloomberg News and CBS News, which clearly addressed a study finding that raising high-density lipoprotein cholesterol and lowering low-density lipoprotein cholesterol levels failed to improve clinical outcomes.<sup>22</sup>

### Stories About Screening Tests That Do Not Explain the Tradeoffs of Benefits and Harms

Stories about screening tests often emphasize or exaggerate potential benefits while minimizing or ignoring potential harms. We found many stories that lacked balance about screening for cardiovascular disease and screening for breast, lung, ovary, and prostate cancer. Such stories appeared in a wide array of publications and network television news programs.

During a television ratings period in November 2013, two television networks featured approaches to cancer screening promotions that were not based on the medical evidence. The *NBC Today Show* showed two of its anchors being screened for prostate cancer on the air, featured a urologist who said there were no harms from screening for prostate cancer, and did not include information about evidence-based guidelines for screening.<sup>23</sup> Days later, an ABC reporter had a mammogram on the air, then announced that she would undergo a bilateral mastectomy. The reporter stated, "I can only hope my story will...inspire every woman who hears it to get a mammogram, to take a self-exam. No excuses. It is the difference between life and death."<sup>24</sup> However, a mammogram will not be the difference between life and death for all women, and women make individual decisions about mammography. The reporter's use of the national television platform has been described as "heartfelt misinformation."<sup>25</sup>

An example of excellence is the *Men's Health* magazine story entitled "The Six Million Dollar Gland."<sup>26</sup> The story informed readers

about the evidence, the debate, and the money surrounding prostate cancer screening and included the points of view of both critics and advocates for screening.

### Fawning Coverage of New Technologies

Journalists often do not question the proliferation of expensive technologies, such as proton beam radiation machines and robotic surgical systems. The use of new technologies can increase the costs of medical care but may not improve care. KERA public radio in Dallas, Texas, reported on both these technologies in its "Battlefield Breakthrough" series, without data or independent perspectives.<sup>27</sup>

An example of excellence is a story about proton beam radiation entitled "The Magic Bullet for Prostate Cancer" that appeared in *Men's Health* magazine. The story's subheading read, "The problem is, it's not magic. And with a price tag of \$200 million, it's the most expensive medical device in the history of the world. Is it worth it?"<sup>28</sup>

### Uncritical Health Business Stories

Health business stories often provide cheerleading for local researchers and businesses, not a balanced presentation of what new information means for patients. Journalists should be more skeptical of what they are told by representatives of the health care industry.

Reuters reported, "Medtronic tests stent for erectile dysfunction." It is unclear why an initial feasibility study<sup>29</sup> in 30 men with

a company-sponsored investigator as the only source was newsworthy.

The *Chicago Tribune* reported, "Area firm's pneumonia treatment passes test." The story featured the company president's positive assessment of study results with no independent analysis and no disclosure that the results of the trial had not been peer reviewed or published.<sup>30</sup>

The *Los Angeles Times* reported, "Drug for menstrual cramps in the works." The story provided no data but quoted a company vice president, the only person quoted, who said that the drug could be a "breakthrough."<sup>31</sup>

An example of excellence is a long-running series of articles in the *Milwaukee Journal Sentinel* that investigated "the troubling influence of drug companies on American medicine...conflicts of interest, flawed science and shoddy oversight by federal regulators."<sup>32</sup>

## Conclusions

For 7 years, our media watchdog project has established that health care news stories often emphasize or exaggerate potential benefits, minimize or ignore potential harms, and ignore cost issues. Our findings can help journalists improve their news stories and help physicians and the public better understand the strengths and weaknesses of news media coverage of medical and health topics.

### ARTICLE INFORMATION

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### REFERENCES

1. Deyo RA, Patrick DL. *Hope or Hype: The Obsession with Medical Advances and the High Cost of False Promises*. New York, NY: AMACOM; 2005.
2. Winsten JA. Science and the media: the boundaries of truth. *Health Aff (Millwood)*. 1985;4(1):5-23.
3. Schwitzer G. The magical medical media tour. *JAMA*. 1992;267(14):1969-1971.
4. Moynihan R, Bero L, Ross-Degnan D, et al. Coverage by the news media of the benefits and risks of medications. *N Engl J Med*. 2000;342(22):1645-1650.
5. Smith DE, Wilson AJ, Henry DA; Media Doctor Study Group. Monitoring the quality of medical news reporting: early experience with media doctor. *Med J Aust*. 2005;183(4):190-193.
6. Cassels A, Lexchin J. How well do Canadian media outlets convey medical treatment information?: initial findings from a year and a half

of media monitoring by Media Doctor Canada. *Open Med*. 2008;2(2):e45-e48.

7. Schwitzer G. How do US journalists cover treatments, tests, products, and procedures? an evaluation of 500 stories. *PLoS Med*. 2008;5(5):e95.
8. HealthNewsReview.org. Reviewers. <http://www.healthnewsreview.org/about-us/reviewers/>. Accessed October 2, 2013.
9. HealthNewsReview.org. Aspirin's heart benefits vary. <http://www.healthnewsreview.org/review/2/>. Accessed September 30, 2013.
10. Berger JS, Roncagliani MC, Avanzini F, Pangrazzi I, Tognoni G, Brown DL. Aspirin for the primary prevention of cardiovascular events in women and men: a sex-specific meta-analysis of randomized controlled trials. *JAMA*. 2006;295(3):306-313.
11. HealthNewsReview.org. New anti-clotting drug bests Warfarin, study says. <http://www.healthnewsreview.org/review/new-anti-clotting-drug-bests-warfarin-study-says/>. Accessed September 30, 2013.
12. Picard A. Be skeptical about the Herceptin hype. <http://www.theglobeandmail.com/life/health-and-fitness/be-skeptical-about-the-herceptin-hype/article737934/>. Accessed October 14, 2013.
13. Schwitzer G. Scary coffee stories-add cream and two lumps of caveats. <http://www.healthnewsreview.org/2013/08/jacked-up-java-stories/>. Accessed September 30, 2013.
14. Knox R. Aspirin vs. melanoma: study suggests headache pill prevents deadly skin cancer. <http://www.npr.org/blogs/health/2013/03/11/173838757/aspirin-vs-melanoma-study-suggests>

-headache-pill-prevents-deadly-skin-cancer. Accessed October 14, 2013.

15. Schwitzer G. Journalistic arrhythmia-hearts flutter over small stem cell study. <http://www.healthnewsreview.org/2011/11/journalistic-arrhythmia-hearts-flutter-over-small-stem-cell-study/>. Accessed October 1, 2013.
16. Saul S. Prone to error: earliest steps to find cancer. *New York Times*. July 20, 2010. [http://www.nytimes.com/2010/07/20/health/20cancer.html?\\_r=0](http://www.nytimes.com/2010/07/20/health/20cancer.html?_r=0). Accessed October 14, 2013.
17. HealthNewsReview.org. Breakthrough obesity drug. <http://www.healthnewsreview.org/review/2121/>. Accessed November 7, 2013.
18. Brown D. The press-release conviction of a biotech CEO and its impact on scientific research. *The Washington Post*. September 23, 2013. [http://www.washingtonpost.com/national/health-science/the-press-release-crime-of-a-biotech-ceo-and-its-impact-on-scientific-research/2013/09/23/9b4a1a32-007a-11e3-9a3e-916de805f65d\\_print.html](http://www.washingtonpost.com/national/health-science/the-press-release-crime-of-a-biotech-ceo-and-its-impact-on-scientific-research/2013/09/23/9b4a1a32-007a-11e3-9a3e-916de805f65d_print.html). Accessed January 11, 2014.
19. HealthNewsReview.org. Beet juice good for brain. <http://www.healthnewsreview.org/review/3307/>. Accessed October 1, 2013.
20. Presley TD, Morgan AR, Bechtold E, et al. Acute effect of a high nitrate diet on brain perfusion in older adults. *Nitric Oxide*. 2011;24(1):34-42.
21. HealthNewsReview.org. New drug 'may turn back the clock on heart disease.' <http://www.healthnewsreview.org/review/3353/>. Accessed October 1, 2013.
22. Schwitzer G. Story of Tredaptive "good cholesterol drug" another lesson on surrogate endpoints. <http://www.healthnewsreview.org/2012/12/story-of-tredaptive-good-cholesterol-drug>

-another-lesson-on-surrogate-endpoints/. Accessed October 14, 2013.

**23.** Schwitzer G. NBC races the clock in a race to the bottom with anchormen & prostate cancer screening promotion. <http://www.healthnewsreview.org/2013/11/nbc-races-the-clock-to-get-giggles-about-prostate-cancer-screening/>. Accessed December 12, 2013.

**24.** Goodman B. Stories about Robach's breast cancer diagnosis ignore the evidence. <http://healthjournalism.org/blog/2013/11/stories-about-robachs-breast-cancer-diagnosis-ignore-the-evidence/>. Accessed January 14, 2014.

**25.** Sulik GA. Amy Robach story spreads heartfelt misinformation. *Psychology Today*. <http://www.psychologytoday.com/blog>

[/pink-ribbon-blues/201312/amy-robach-story-spreads-heartfelt-misinformation](http://pink-ribbon-blues/201312/amy-robach-story-spreads-heartfelt-misinformation). Accessed January 11, 2014.

**26.** Thornton J. The six million dollar gland. <http://www.menshealth.com/health/six-million-dollar-gland>. Accessed October 14, 2013.

**27.** Schwitzer G. Texas-sized battlefield breakthrough hype by Dallas radio station-proton & robots. <http://www.healthnewsreview.org/2012/12/texas-sized-battlefield-breakthrough-hype-by-dallas-radio-station-proton-robots/>. Accessed October 1, 2013.

**28.** Beil L. The magic bullet for prostate cancer. <http://www.menshealth.com/health/prostate-cancer-proton-therapy?fullpage=true>. Accessed October 14, 2013.

**29.** HealthNewsReview.org. Medtronic tests stent for erectile dysfunction. <http://www.healthnewsreview.org/review/4373/>. Accessed October 2, 2013.

**30.** HealthNewsReview.org. Area firm's pneumonia treatment passes test. <http://www.healthnewsreview.org/review/1093/>. Accessed October 2, 2013.

**31.** HealthNewsReview.org. Drug for menstrual cramps in the works. <http://www.healthnewsreview.org/review/2662/>. Accessed October 2, 2013.

**32.** Fauber J. Side Effects series. <http://www.jsonline.com/news/health/99478824.html>. Accessed October 14, 2013.